Data Sheet

FEK Sensors - Control of Cooling Circuit

Products

FEK-IF with integrated sensor

FEK-FF with remote sensor

The FEK sensor is installed in rooms which have surplus heat due to internal or external heat sources; i.e. only control of cooling circuit is needed.

When the room temperature rises above the set temperature the FEK sensor opens the cooling valve.

FEK-IF as well as FEK-FF sensors can be used for chilled ceilings, fan-coils and induction units.

For cooling circuits in fan-coils and induction units use the FEK-FF with remote sensor.

The remote sensor can e.g. be placed below the cabinet of the air inlet or on a separate wall surface.

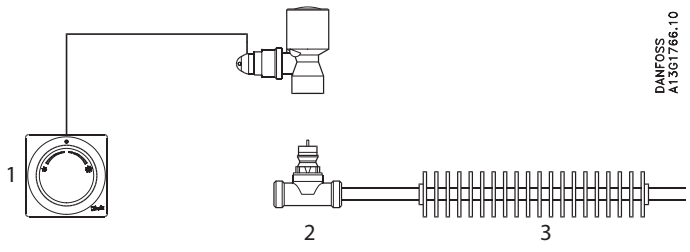
By placing the sensor in the air inlet a quicker reaction time of the air temperature changes is achieved.

Ordering and Specifications

Type	Sensor	Capillary tube	Setting range	Code no.
FEK-IF	Integrated sensor	5 m	17-27 °C	**013G5465**
FEK-FF	Remote sensor	2 + 2 m		**013G5464**

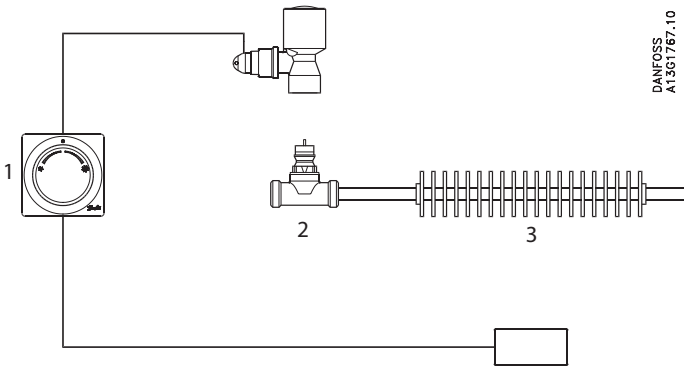
Application

Control of cooling circuit - chilled ceiling



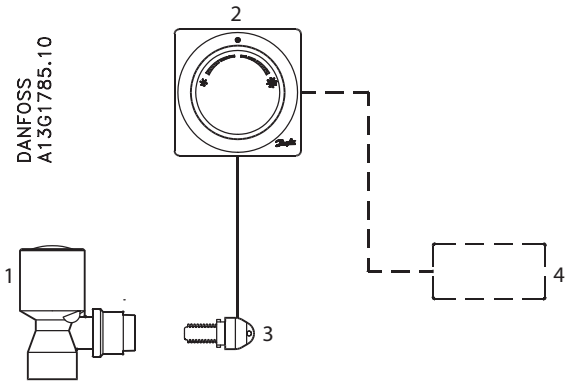
1. FEK-IF
2. RA-C
3. Cooling circuit

Control of cooling circuit - fancoils and inductions units



1. FEK-FF
2. RA-C
3. Cooling circuit

FEK Sensor Design



1. Cooling adapter
2. Remote temperature adjuster
3. Actuator
4. Remote sensor (only FEK-FF)

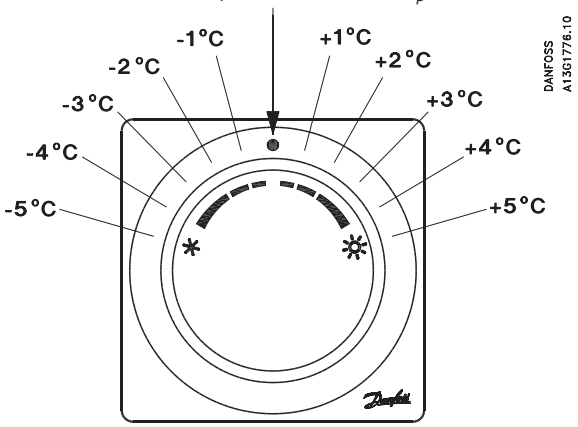
The FEK sensors are applied with RA-C valves.

The FEK sensors are equipped with a reverse device for the control of cooling circuits.

With the reverse device the valve in the cooling circuit will open when the temperature rises above the set temperature.

Temperature Setting

Comfort temperature ~ 22 °C at X_p = 0 K



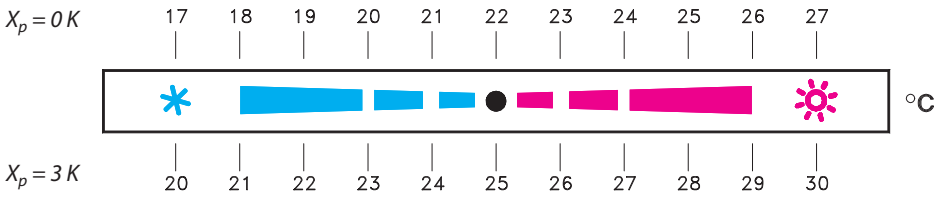
The FEK sensors have been developed for room cooling via water-based cooling systems.

The FEK sensors are based on the self-acting principle. The liquid-filled sensors control the valves via capillaries and adapters.

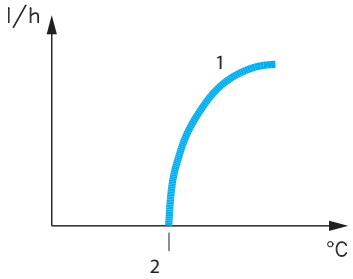
The scale shows the approximate set-point offset from the comfort temperature which is approximately 22° C at X_p = 0 K.

Temperature Control Through Cooling with FEK Sensor

Control area of FEK sensor with RA-C valve



A setting in the blue temperature area means that the setpoint of the cooling circuit is placed below the comfort temperature, i.e. the valve will open at a lower temperature than the comfort temperature of appoximately 22 °C.

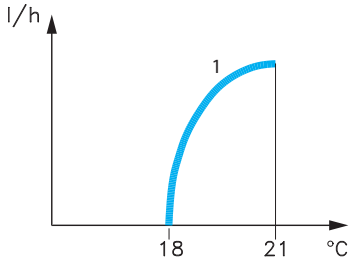


With a setting in the red temperature area the setpoint of the cooling circuit is placed above the comfort temperature. The valve in the cooling circuit will open at a room temperature above the comfort temperature of approximately 22 °C.

1. Waterflow cooling
2. Setpoint on knob

Example

The knob is turned to lower the comfort temperature with 4 °C from 22 °C to approx. 18 °C at X_p = 0 K.



As the set point temperature is at X_p = 0 K the valve in the cooling circuit will not open before the sensor temperature exceeds 18 °C.

In the presetting N the RA-C valve works with a P-band of maximum 3 K. This means that the RA-C valve will be fully open and give maximum flow to the cooling circuit at a sensor temperature of approx. 21 °C (set point: 18 °C + P-band: 3 K).

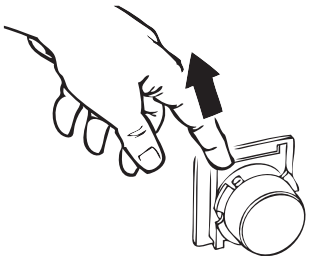
1. Waterflow, cooling RA-C valve with presetting N

Limiting the Set Temperature of FEK Sensors

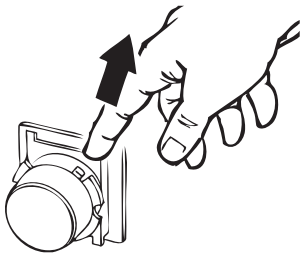
The set temperature of the remote temperature adjuster depends on the sensor type and the valves, which are used with the sensors.

It is easy to limit or lock the set temperature by means of the built-in locking/limiting device.

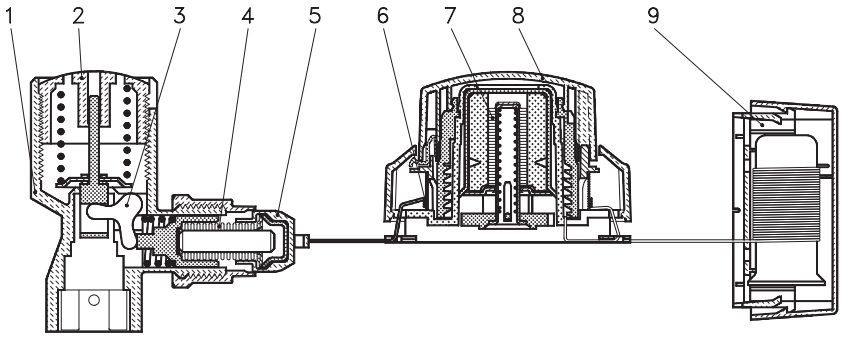
Minimum limitation of temperature area



Maximum limitation of temperature area



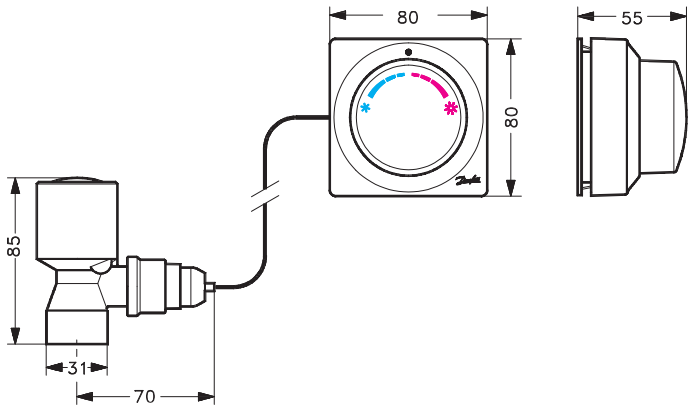
Design



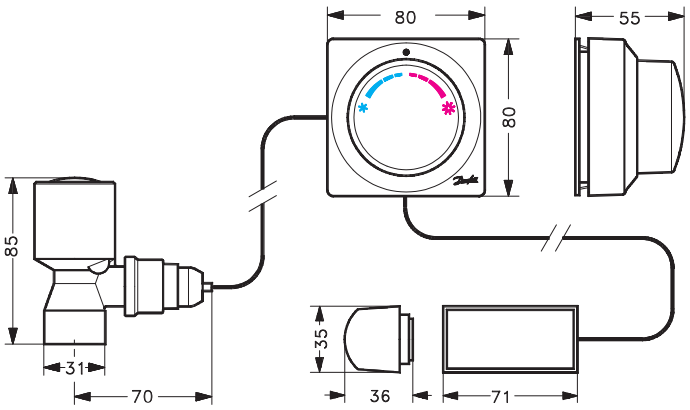
1. Cooling adapter
2. Neutral zone adjustment knob
3. Reverse device
4. Adjustment bellow
5. Actuator
6. Capillary reel
7. Bellow
8. Remote temperature adjuster
9. Remote temperature sensor (only FEK-FF)

Dimensions

FEK-IF



FEK-FF



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